

## **LIBRARY FACILITIES FOR VISUALLY CHALLENGED STUDENTS IN MYSORE CITY: A STUDY**

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### **ABSTRACT**

Paper furnishes the use of various assistive technologies by the visually challenged users of information sources. Responses have been sought from the visually impaired users through formal interview as to the extent of the use of the Learning Resource Centres and the extent of familiarity with the assistive technology. The study also focuses on the need for orientation programmes or the training programmes for effectively handling hardware and software packages made available to the user communities. The extent of training requirement is also depicted.

**KEYWORDS:** Visually Challenged, Assistive Technology, Library Facilities for Blind

### **1. Introduction:**

The University of Mysore nurtured its library system with rich document collections since its establishment in 1916. More than one million volumes have been made available for its patrons through 26 libraries including the main University Library and those belonging to its constituent colleges, institutions and post-graduate departments. University Library has set up Digital Information Resource Centre (DIRC) with 200 computers in the library for facilitating access to e-books, e-journals, e-theses, Institutional Repositories of national research institutions of high repute.

According to Kenneth Jernigan "a person is blind to the extent that he must devise alternative techniques to do efficiently those things he would do with sight if he had normal vision". Visually Impaired refers to one who has experienced loss of vision to such an extent as to qualify for additional support requirement through a significant restriction of visual capability. Visual impairment is actually the effect of a functional loss of vision, before the eye disorder itself. Total blindness is the inability to distinguish light from dark, or the total inability to see. Visual impairment or low vision is a severe reduction in vision that can't be corrected with standard glasses or contact lenses and reduces a person's ability to function at certain or all tasks.

The university has established Learning Resource Centre and also taken up University Grants Commission's UPE Holistic Project "Centre for Education of Visually Challenged — DRUSHTEE" to provide innovative teaching technique and philosophy that continues to have far-reaching effects on the lives of visually challenged students. Low vision or partially sighted students can now read for longer hours without tiredness. Some of the prominent hardware and software facilities, popularly called "Assistive Technology" ment for visually challenged students and faculty are explained in this paper.

**The major Library or Reading facilities for visually challenged students in Mysore are attached to the following institutions.**

1. University of Mysore, main Post-graduate Library
2. Kuvempu Institute of Kannada Studies.
3. College of Fine Arts.
4. Helen A. Kellar Institute for Human Disabilities.

5. JSS Polytechnic for the Differently Aabled.
6. Ranga Rao and Sons Memorial School for Blind.

**“For most people, Technology makes things easier. However, for people with Disabilities, Technology makes things possible!” by Mary Pat Radabaugh**

Low vision or partially sighted students can read for longer hours without tiredness. It is a unique computer reading facility for visually challenged with a congenial classroom environment. The Learning Resource Centre has the facility to read printed books and also print Braille books. Some of the prominent hardware and software facilities, popularly called “Assistive Technology” for visually challenged installed at the centre are explained here below.

## **2. SARA-Stand Alone Text Reading Machine:**

A simple text reading machine for those who are not comfortable with computers but still need to read printed books and journal articles. All that the user needs to do is simply place the text on the platform and SARA instantly reads out the contents. The speed of reading and voice can be increased or decreased according to the convenience, even magnifies the text, object, diagram, picture to be viewed. The accent can also be selected while using SARA.

SARA Scanning and Reading Appliance is easy-to-use solution for reading a wide variety of printed material, including books, mail, newspapers, magazines, and so much more. SARA uses the latest in advanced optical character recognition technology to scan text and then read it aloud in crisp, clear speech. SARA automatically stores and remembers the contents of over 15 lakh pages as it has a hard disk of 60GB.

SARA can be operated without any experience or training nor any computer knowledge. Just place your book or document on the scanning area, and press the scan button. SARA automatically scans and recognizes the text and reads it to you.

## **3. Prisma Magnifier:**

The Prisma is a full color reading device that offers the user a flexible way to read, write and look at photographs and other things that need to be magnified. It offers variable magnification and a full color, magnified image is displayed on a standard television.

A stylish, full color magnifier, the Prisma connects to a standard TV and means you can magnify text and even photos by up to 52 times! The Prisma is easy to use and its simple controls mean you can view text and photographs in full color or enhanced reading modes. The unit folds to a mere 60mm and only weighs 1kg making it ideal for transportation.

Prisma is useful to persons suffering from low vision due to retinitis pigmentosa, macula degeneration or other eye problems causing the vision to be substantially lowered needing high magnification at close distances to read, write or view objects/pictures.

## **4. PAIF: Picture in a flash- (Graphic Embossor):**

Picture in a flash enable the automatic production of tactile graphic material using a heat sensitive paper, known as Capsule Paper. It is a device known generally as Tactile Image Maker, which produces high quality tactile graphics suitable for blind. It is popularly known as Graphic Embossor.

## **5. JAWS Pro Talking Software:**

A JAW (Job Access with Speech) converts your computer into a talking computer. It reads out all matter that is on the computer's screen through your computer's speakers/ headphones, thus enabling a visually challenged person to use the computer independently and work on all MS Windows applications.

JAWS Software offers comprehensive screen reading capable for Windows. It converts normal PC

o a talking PC to enable the blind to operate computers independently including Internet access.

## 6. Magic Large Print Keyboard:

Magic Large Print Keyboards have been designed specifically for those with conditions that cause visual impairment or low vision.

## 7. Zoom-Ex Instant Reader:

Place the book under zoom-ex and press one keystroke, within 5 seconds, one can read the magnified text or listen to it reading for visually challenged. *Zoom Twix is a twin function reading device for Near reading of documents and distant viewing of blackboards/ whiteboards in classrooms or boardrooms.*

## 8. Features:

In reading mode, it not only magnifies the text but also reads it out aloud instantly in a Clear Indian Voice and **highlights each word as it is read.**

Automatic Page Orientation

**Make Large Print Books:** You can print the entire magnified text and make large print books

- Its **Motion Sensor Technology provides high speed conversion of Text to Digital Format @ 20 pages per minute.**

**Create Talking Books:** Scanned books can be instantly converted into audio files  
**Allows reading of Tables and Financial Records**

## 9. Plex Talk DAISY Readers and Recorders:

A pocket size DAISY Reader cum Recorder with full DAISY navigation features that converts text files, word documents and even voice recorder.

## 10. Angel Book Reader:

This has 4.5 GB capacity. Electronic format of journal articles or books can be loaded to Angel Reader and it will read out for the blind. There is also provision to listen to FM Radio. Further, the portable equipment can be used to record classroom lectures and group discussions.

## 11. Braille box high speed Braille Embosser v4:

High speed single sheet fed Braille printer and the Braille Box is a milestone for production braille embossers. With this 900 pages can be printed in 60 Minutes.

300 characters/second - fastest production embosser

High capacity production - holding up to 400 cut sheet pages

Automatic magazine format - hassle free book printing

Noise canceling design

5 X globally renowned design award winner

Multi-lingual voice speech feedback

High Resolution Tactile Graphics

## 12. TOPAZ -XL HD Desktop Video Magnifier:

**TOPAZ desktop video magnifiers make seeing type, handwriting, and small details easier than ever before.** Just place a letter or picture on the moveable reading table, and adjust the magnification level and display colours that best suit your eyesight. The document gets displayed in super large size on the



screen. Anything that fits on the reading table can be magnified.

The TOPAZ uses a true **High Definition camera** to produce the clearest, sharpest image and crispest text available. The sharp image allows the TOPAZ XL HD to offer the lowest magnification and widest field of view of any desktop video magnifier, so you can maximize the amount of information displayed on the screen - especially with a widescreen monitor. This reduces the need to move the reading table when reading text, looking at photo albums, or working on crafts and other projects. Many users will find they can display an entire page of text in high contrast and read comfortably without moving their document back and forth under the camera.

### 13. Refreshable Braille Displays:

A **refreshable braille display** or **braille terminal** is an electro-mechanical device for displaying braille characters, usually by means of round-tipped pins raised through holes in a flat surface. Blind computer users, who cannot use a normal computer monitor, use it to read text output. Speech synthesizers are also commonly used for the same task, and a blind user may switch between the two systems or use both at the same time depending on circumstances.

Refreshable Braille Displays use screen readers such as JAWS to activate the refreshable Braille cells and act as a tactile monitor that allows the user to navigate and read information in dynamic Braille. Ideal for those visually challenged who prefer to read the contents of the PC in Braille instead of the Standard QWERTY keyboard. It connects to any PC or laptop installed with JAWS software.

### 14. Kurzweil OCR Reading Software:

The software when combined with a flatbed scanner and PC convert into a reading machine. All one needs to do is to place the book or printed text face down on the scanner and once it is scanned the software converts it to readable format and speaks out aloud the contents.

### 15. BONITA Portable Mouse Magnifier:

Portable, full colour mouse magnifier that is the size of a computer mouse and connects directly to any TV or a monitor with video input, allowing you to read newspapers, magazines, letters, books, documents, bills and even medicine labels easily.

A survey has been conducted covering the library facilities and the availability of Assistive Technology in these institutions. Further, formal interview method has been adopted for data collection from the users who rely upon the Assistive Technology available at the University of Mysore. The authors have also adopted observation method to record the facilities made available here. The users who visit the Mysore University Library have been interviewed.

**Table-1. Category-wise users of Learning Resource Centers**

SL. No.	Category of users	No of Users Visited During 2012-13	
		No of Users	No of Visits
1	Faculty	9 (26.47%)	42 (14.73%)
2	Research Scholars	6 (17.64%)	34 (11.92%)
3	Students	19 (55.88%)	209 (73.33%)
Total		34 (100%)	285 (100%)

Table 1 depicts the category-wise users of the Learning Resource Centers (LRC) for visually challenged users. Among the users of LRC's, 26.47% are the faculty, 17.64% represents research scholars and 55.88% represents students community. Further, as regards the number of visits of the users during July 2012 to October 2013, the data clearly indicates that a large percentage of users of assistive technologies is represented by the category of visually challenged students which account for 55.88%. It is encouraging to note a good number of users among the faculty representing 26.47% rely upon assistive technologies for accessing information resources.

**Table-2 Extent of familiarity with the assistive technology**

Sl No	Assistive Technology	HIGH ER	MODERA TE	LOWE R
1	Sara Book Reader, Angel Book Reader, Plectalk (Book Readers)	21 (23.59 %)	7 (19.44%)	6 (13.33%)
2	Prisma, Zoom-Ex, Topaz (Magnification Equipment)	23 (25.84 %)	9 (25.00%)	2 (4.44%)
3	JAWS Talking Software, Kruzwel OCR Software (Software Packages)	16 (17.97 %)	6 (16.66%)	12 (26.66%)
4	V4. Braille Embossor, Braille Paper Printer, Graphic Embossor (Braille Text Printers)	15 (16.85 %)	9 (25.00%)	10 (22.22%)
5	Refreshable Braille Display Board Instant Braille Script Reader & Editor)	14 (15.73 %)	5 (13.88%)	15 (33.33%)
Total		89 (100%)	36 (100%)	45 (100%)

Table-2 depicts the extent of familiarity with the assistive technologies by the visually challenged users. The all the equipment are being used to a higher extent except Refreshable Braille Display Board. 33.33% of users state that the use of Refreshable Braille Display Board is to a lower extent. The table also shows that the Prisma, Zoom-Ex, Topaz equipment are being used to a higher extent which account for more than 25.84 %.

**Table-3 Training requirement of the respondents**

Sl No	ASSISTIVE TECHNOLOGY	No of Respondents	
		YES	NO
1	Sara Book Reader, Angel Book Reader, Plectalk (Book Readers)	8 (10.66%)	26 (27.36%)
2	Prisma, Zoom-Ex, Topaz (Magnification Equipment)	6 (8.00%)	28 (29.47%)



3	JAWS Talking Software, Kruzwel OCR Software ( Software Packages)	21 (28.00%)	13 (13.68%)
4	V4. Braille Embossor, Braille Paper Printer, Graphic Embossor ( Braille Text Printers)	16 (21.33%)	18 (18.94%)
5	Refreshable Braille Display Board Instant Braille Script Reader & Editor)	24 (32.00%)	10 (10.52%)
Total		75 (100%)	95 (100%)

Table-3 depicts the training requirement projected by the respondents. It is clear from the table that a large number of users need training especially in effectively handling JAWS Talking Software, Kruzwel OCR Scanner Software, and Refreshable Braille Display Board. Further, a large majority of respondents ranging representing 32% need training in effectively using Refreshable Braille Display Board.

#### 16. Findings and Conclusion:

- The category of students avail the facility of Learning Resource Centre at large and is bent upon in handling assistive technology for accessing information resources.
- All the visually challenged students rely upon assistive technologies to access information resources in the library.
- A moderate percentage of visually challenged users are not fully versed in using the assistive technologies. They need training to a considerable extent for the effective use of technologies.
- A large percentage of users are familiar with the use of book readers, Prisma, Zoom-Ex, Topaz and magnification equipment and the familiarity is also to the higher extent.
- Through Jaw Talking Software as well as Refreshable Braille Display Board are the important tools for communication, many users representing all the categories is not completely familiar with the use.

Assistive technology is a boon to the visually challenged users of information resources in the library. Unlike yester years, the users access information instantaneously using assistive technology on par with the normal users with vision. The LRC's has to take into consideration the expectations of blind as well as the low vision students, so as to increase the number of admissions to the institution. Above all, adequate knowledge and skill in handling assistive technologies is an important factor amongst the staff upon which the delight of visually challenged users of Learning Resource Centers rests. The introduction of refreshable Braille display has helped the visually challenged students and faculty to read as well as edit the text instantaneously. Thorough training for effective use of assistive technology is an important aspect for access to electronic and print information resources.

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